

SOSKESVENS KAYA, F. M.

~~Reaction of phenylmagnesium bromide with silicon tetrabromide.~~

G. V. Mirokha and N. M. Sosketsvenskaya (Agr. Inst., Saratov) 2, 317. *Oshchadnoye Stroitelstvo*, 1950, 116-16; *J. Russ. Chem. Chem. U.S.S.R.* 26, 113-16 (1950) (Engl. translation).

Passage of SiF₄ into PhMgBr sohn. from 70.9 g. PhBr with ice cooling gave a reaction mixt. which formed 2 liquid layers, and some solid; after 24 hrs. the mixt. was treated with cooling with 11% HCl, yielding 2.73 g. Ph₂SiF₄, b.p. 247-8° (2.48 g. of less pure product also formed), and 60.5% Ph₂SiF₃, b.p. 245-50°, m. 84°. PhMgBr from 2.57 g. Mg was treated with SiF₄ as above for 20 min., and the 2-layered mixt. was treated with an equal amt. of PhMgBr sohn. as above, freed of Et₂O, and heated 1 hr. at 175-80°, yielding after usual treatment 8.4 g. Ph₂Si (I); m. 230.5°. In 5 days at room temp. - PhMgBr and Ph₂SiF (4.17 g.) gave 0.85 g. I; at 180-2° a 93% yield was obtained.

G. M. Kosolapoff

MEDOKS, O.V.; SOSHESTVENSKAYA, Ye.M.

Interaction of phenylmagnesium bromide with silicon tetrachloride.
Zhur. ob. khim. 26 no.1:116-118 Ja '56. (MLRA 9:5)

1. Saratovskiy sel'skokhozyaystvennyy institut.
(Magnesium compounds) (Silicon chlorides)

SOSHES I VENSKAYA E. M.

Preparation of arylhalosilanes. E. M. Soshestvenskaya.
Zhur. Obshchei Khim. 26, 231-2; J. Gen. Chem. U.S.S.R. 26,
247-8(1956)(Engl. translation).—Heating 16.5 g. Ph₃Si and
25 g. SiCl₄ with 1 g. CuCl in a sealed tube 12 hrs. at 300–30°
gave on distn. a fraction, b. 86–310°. Hydrolysis of this
gave some of the original Ph₃Si and 4.15 g. Ph₃SiOH, m.
154–5°. If the heating is performed at 250–300° the yield of
Ph₃SiCl is nil. The estd. yield of Ph₃SiCl above was 34%.

G. M. Kosolapoff

300

✓ 22

YAKOVS, G.V.; SOSHESTEVSKAYA, Ye.N.

Reaction of silicon tetrafluoride with benzyl magnesium chloride.
Zhir. ob. khim. 26 no.12: 3310-3312 D '56. (MLRA 10:7)

1. Saratovskiy sel'skokhozyaystvennyy institut.
(Magnesium chlorides) (Silicon tetrafluoride)

Soshestvenskaya, Ye. M.

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AUTHORS: Medoks, G.V., and Soshestvenskaya, Ye. M.

TITLE: Derivation of Nitrates of Tetrasubstituted Phosphonium and Arsonium Bases (O poluchenii nitratov chetyrekhzameshchenykh fosfoniyevykh i arsoniyevykh osnovaniy)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 271-272 (U.S.S.R.)

ABSTRACT: Nitrates of tetrasubstituted phosphonium and arsonium bases can be used in analytical chemistry and for the derivation of double bonds with nitrates of rare earth elements which in many instances differ in solubility and melting point. Such nitrates are usually prepared by nitric acid neutralization of the free bases which in turn are obtained from the reaction of halide salts with a suspension consisting of water and silver oxide or through double decomposition of halide bases with silver nitrate, and in some cases also with nitric acid. A method of obtaining nitrates of tetrasubstituted phosphonium and arsonium bases from ammonium chlorides, or bromides and nitrate without the application of silver compounds, is described. Taking into consideration the poor water-solubility of certain nitrates of phosphonium and arsonium bases as compared with homologous

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Soshestvenskaya, G. M.

Dependence of yields of tetrasubstituted alkyl and aryl silanes on the magnitude of charges and radii of cations of fluosilicate salts. G. V. Mezely and E. M. Soshestvenskaya (All. Inst., Saratov). *Zhur. Osnchel Khim.* 27, 720-721 (1957); cf. *C.A.* 52, 53291. —Addn. of PhCH_2MgCl from 55.19 g. PhCH_2Cl to 3.12 g. Li fluosilicate and heating 1 hr. to 160–70° gave after treatment with aq. HCl, 0.88 g. $(\text{PhCH}_2)_3\text{Si}$, m. 127.5°; Na fluosilicate gave 1.43 g. yield; K salt gave 2.38 g. yield; Rb salt gave 3 g. yield; Sc salt gave 0.21 g. yield. EtMgBr similarly gave Et_3Si in yields which rose progressively with increase of ionic radius of the metal used, with decrease of yield on passing to the doubly charged ions of the II group. G. M. K. and I. Poff

Soshestvenskaya, EM

✓ Mobility of fluoride ions of salts of fluosilicic acid depend.
on the radii of their cations. G. V. Medoks and E. M.
Soshestvenskaya. (Agr. Inst., Saratov). Zhur. Osnchel
Khim. 27, 1897-2000(1987); cf. C.A. 51, 12878g.—The
yields of tetrasubstituted silanes in the reaction of alkali
fluosilicates with Grignard reagents are linearly dependent
on the radii of the cations. Thus, treating PrMgBr with the
Li salt, evapg. the Et_2O , and heating the residue at 160-70°
(the exothermic reaction required momentary cooling) gave,
after treatment with aq. HCl, Pr_4Si (from 3.13 g. Li salt
and 58 g. PrBr_3). The Na salt (3.76 g.) similarly gave 0.86
g. Pr_4Si , the K salt (4.41 g.) 1.20 g. Pr_4Si , and the Rb salt
(0.26 g.) 1.52 g. Pr_4Si . BuMgBr gave a similar set of re-
sults.

G. M. Kosolapoff

SOSINKINA, YE. D.

Sosinkina, Ye. D. "The biostratigraphy of the Devonian period in the Urals, based on the fauna of rugosa corals", Byulleten' Mosk. o-va ispytateley prirody, Otd. geol., 1949, Issue 2, p. 34-62, - bibliog: 8 items.

SO: U-4631, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 24, 1949).

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MARGULIS, V.S.; MITROV, V.A.; NIKOLAYENKO, N.O.; BOBRUSHKIN, L.G.;
BUROV, A.I.; RYBAKOV, V.N.; SOSHIN, A.F.; TATSIYENKO, P.A.;
TOVSTANOVSKIY, O.D.; YUROV, P.P.; Prinimali uchastiye:
NIFAGINA, A.A.; CHERNYY, I.I.; GERSHOYG, Yu.G.; KOSTIKOV, A.G.;
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Magnetization roasting of Kerch ores in the experimental
factory of Kamysh-Burun Combine. Gor. zhur. no.12:30-37
D '62. (MIRA 15:11)

1. Institut Mekhanobrchermet, Krivoy Rog (for Bushuyev,
Gubin, Goncharenko, Karmazin, Margulis, Mitrov, Nikolayenko,
Nifagina, Chernyy, Gershoyg, Kostikov). 2. Kamyshburunskiy
zhelezorudnyy kombinat, Kerch' (for Bobrushkin, Burov,
Rybakov, Soshin, Tatsiyenko, Tovstanovskiy, Yurov, Dolgikh,
M.A.; Movskovich, S.A.; Stupin, D.D.; Nevoysa).
(Kerch Peninsula—Ore dressing)
(Iron ores)

SOSHIN, A.N.

KRYMSKIY, G.A., kandidat tekhnicheskikh nauk; KARACHENTSEV, B.I., inzhener;
SOSHIN, A.N., inzhener.

~~New series of heavy-duty demountable fuses without filler. Vest,~~
~~elektreprom. 28 no.3:8-10 Mr '57.~~ (MIRA 10:4)

1. Zaved "Diname".
(Electric contactors)

BAULIN, Ya.N.; BELIKOV, N.A.; SOSHIN, A.V., professor, redaktor.

[N.A.Belikov's method for over-all mechanization of plastering work]
Kompleksnaia mekhanizatsiia shtukaturnykh rabot po metody N.A.Belikova.
Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 18 p.
(MLRA 7:6)

(Plastering)

SASHIN, A.V.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
SASHIN, A.V.	"Technology of Construction Production" (textbook)	Moscow Construction Engineering Institute imeni V.V. Kuybyshev

SO: W-30604, 7 July 1954

SOSHIN, A. V.

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1954

Tekhnologiya stroitel'nogo proizvodstva (Building Industry
Technology) Izd. 2. Perer I Dop. Moskva, Izd-vo Ministerstva
Kommunal'nogo Khozyaystva RSFSR, 1954.

579 p. Illus., Diagrs., Tables.

"Literatura": p. (575)

PETROV, Nikolay Semenovich; SOSHIN, A.V., doktor tekhnicheskikh nauk,
professor, retsenzent; VOSKRESENSKIY, N.N., inzhener, redaktor;
POPOVA, S.M., tekhnicheskiy redaktor

[Machines and mechanized tools for the finishing work in building]
Mashiny i mekhanizirovannye instrumenty dlia stroitel'nykh otdeloch-
nykh rabot. Izd. 2-oe, dop. i perer. Moskva, Gos. nauchno-tekhn.
izd-vo mashinostroit. lit-ry, 1956. 287 p. (MLRA 9:11)
(Building machinery)

SOSHIN, Andrey Vasil'yevich, doktor tekhnicheskikh nauk, professor;
ZAYTSEV, A.G., kandidat tekhnicheskikh nauk, dotsent, nauchnyy
redaktor; UDOD, V.Ya., redaktor izdatel'stva; PERSON, M.N.,
tekhnicheskiy redaktor

[Mechanized building and assembling and its organization] Organizatsiya
i proizvodstvo mekhanizirovannykh stroitel'no-montazhnykh rabot.
Moskva, Gos. izd-vo po stroyt. i arkhitekture, 1956. 295 p. (MIRA 10:3)
(Construction industry) (Building machinery)

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BAUMAN, V.A.; BARSOV, I.P.; BASHINSKIY, S.V.; BOYKO, A.G.; VALUTSKIY,
I.I.; ZAPOL'SKIY, V.P.; ZOTOV, V.P.; IVANOV, V.A.; YAZARIKOV, V.M.;
LEVI, S.S.; MALOLETKOV, Ye.K.; MEREKOV, A.S.; MIROPOL'SKAYA, N.K.;
OSIPOV, L.G.; PEREL'MAN, L.M.; PETROV, G.D.; PETROV, N.M.; POLYAKOV,
V.I.; VATSSLAVSKAYA, L.Ya.; VAKHRAZEMEYEV, S.A.; VERZHITSKIY, A.M.;
VLAZOV, P.A.; VOL'FSOHN, A.V.; VOSCHININ, A.I.; DZHUNKOVSKIY, N.N.;
DOMBROVSKIY, N.G.; YEPIFANOV, S.P.; YEFREMENKO, V.P.; ZELICHENOK, G.G.;
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Andrei Vladimirovich Konorov; obituary. Mekh. stroi. 16 no.1:32 Ja
'59. (MIRA 12:1)

(Konorov, Andrei Vladimirovich, 1890-1958)

BONDAR', Ye.P., inzh.; VLASOVA, M.A., inzh.; KALININ, B.P., inzh.; KOPP, L.M., inzh.; SOKOLOVA, A.D., kand.tekhn.nauk; TSEGEL'SKIY, V.L., inzh.; UTENKOV, V.F., kand.tekhn.nauk [deceased]; BOGDANOV, S.I., inzh., nauchnyy red.; TRUBIN, V.A., glavnnyy red.; SOSHIN, A.V., zam.glavnogo red.; GRINEVICH, G.P., red.; YEPIFANOV, S.P., red.; ONUFRIYEV, I.A., red.; KHOKHLOV, B.A., red.; ZIMIN, P.A., red.; SKVORTSOVA, I.P., red.izd-va; GOL'BERG, T.M., tekhn.red.; EL'KINA, E.M., tekhn.red.

[Handbook for the erection of reinforced-concrete elements of industrial buildings] Spravochnik po montazhu zhelezobetonnykh konstruktsii promyshlennyykh zdanii. Pod red. B.P.Kalinina. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 315 p. (MIRA 14:3)

1. Moscow. Gosudarstvennyy institut po proyektirovaniyu stal'nykh konstruktsiy. (Reinforced concrete construction)

BODUNGEN, I.N., inzh.; VINOGRADOV, K.V., inzh.; VELLERSETZYN, A.L., inzh.; GOL'DGOR, B.G., inzh.; KUZ'MIN, V.S., inzh.; KULIKOV, P.S., inzh.; LEBEDEV, N.N., inzh.; LEVI, S.S., kand.tekhn.nauk; ROZANOV, M.S., inzh.; SIDOROV, V.N., inzh.; SOKOLOV, D.V., inzh.; SLONIM, N.M., inzh., laureat Stalinskoy premii; EPSHTEYN, A.L., inzh.; AMTRUSHIN, B.D., inzh., nauchnyy red.; SIMAKOV, S.N., inzh., nauchnyy red.; TRUBIN, V.A., glavnnyy red.; SOSHIN, A.V., zam.glavnogo red.; GRINEVICH, G.P., red.; YEPIFANOV, S.P., red.; ONUFRIYEV, I.A., red.; ZIMIN, P.A., red.; VDOVENKO, Z.I., red.izd-va; SHIROKOVA, G.M., red.izd-va; EL'KINA, E.M., tekhn.red.

[Power engineering handbook for construction work] Spravochnik energetika na stroitel'stve. Izd.2., perer. i dop. Pod red. N.N. Lebedeva. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1960. 736 p. (MIRA 13:11)

(Power engineering)

SOSHIN, A. V., prof., doktor tekhn. nauk

Using flow line methods in building large-panel houses according
to hourly work schedules. Sbor. trud MISI no. 37:5-43 '60.
(MIRA 13:8)

1. Kafedra "Tekhnologiya stroitel'nogo proizvodstva" Moskovskogo
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(Precast concrete construction)
(Apartment houses)

ROGOVSKIY, L.V., inzh.; CHERKASHIN, V.A., kand.tekhn.nauk, starshiy nauchnyy sotrudnik; GORBANEV, V.P.; TRUBIN, V.A., glavnnyy red.; SOSHIN, A.V., zam.glavnogo red.; GRINEVICH, G.P., red.; YEPIFANOV, S.P., red.; ONUFRIYEV, I.A., red.; KHOKHLOV, B.A., red.; ZIMIN, P.A., red.; YUDINA, L.A., red.izd-va; RYAZANOV, P.Ye., tekhn.red.; GOL'BERG, T.M., tekhn.red.

[Earthwork operations under winter conditions] Proizvodstvo zemlyanykh rabot v zimnikh usloviakh; spravochnoe posobie. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit.materialem, 1961. 149 p. (MIRA 14:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva. 2. Rukovoditel' laboratori i zemlyanykh rabot Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva (for Rogovskiy). 3. Laboratoriya zemlyanykh rabot Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva (for Cherkashin). 4. Starshiy tekhnik laboratori zemlyanykh rabot Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva (for Gorbanev).

(Earthwork--Cold weather conditions)

STARUKHIN, N.M., inzh.; BOGATYKH, Ya.D., inzh.; TRUBIN, V.A., glav. red.;
SOSHIN, A.V., zam. glav. red.; GRINEVICH, G.P., red.p YEPIFANOV,
S.P., red.; ONUFRIYEV, I.A., red.; KHOKHLOV, B.A., red.; ZIMIN, P.A.,
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[Handbook on masonry operations] Spravochnik po kamennym rabotam.
Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam,
1961. 198 p. (MIRA 14:10)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organi-
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BARANOV, L.A.; GORBATOV, V.I.; YEVREINOV, D.V.; YERMAKOV, Ye.I.;
PITERSKOV, N.I.; RYL'TSEV, A.N.; RYAZANTSEV, K.G.; TOROPOV, A.S.;
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SOSHIN, A.V., zam.glavnogo red.; RAKITIN, G.A., red.; GRINEVICH,
G.B., red.; YEPIFANOV, S.P., red.; ONUFRIYEV, I.A., red.; KHOKHLOV,
B.A., red.; ZIMIN, P.A., red.; TABUMINA, M.A., red.izd-va;
OSENKO, L.M., tekhn.red.

[Manual on accident prevention and industrial sanitation during
construction and repair operations] Spravochnoe posobie po tekhnike
bezopasnosti i promsanitarii pri proizvodstve stroitel'no-montazh-
nykh rabot. Pod red. G.A.Rakitina. Moskva, Gos.izd-vo lit-ry po
stroit., arkhit. i stroit.materialam, 1961. 359 p.

(MIRA 14:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organi-
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(Construction industry--Hygienic aspects)

GRIGOR'YANTS, A.S.; GLADSHTEYN, D.A.; LANTSBURG, Ya.B.; TRUBIN, V.A., glav.
red.; SOSHIN, A.V., zam. glav. red.; GRINEVICH, G.P., red.; YEPIFA-
NOV, S.P., red.; ONUFRIYEV, I.A., red.; KHOKHLOV, B.A., red. ZIMIN,
P.A., red.; KANTSEL', Ya.O., nauchnyy red.; SHIROKOVA, G.M., red.
izd-va; SHERSTNEVA, N.V., tekhn. red.

[Handbook on the consumption of spare parts and materials in operating
and repairing building and road machinery] Spravochnik po raskhodu
zasapnykh chastei i materialov dlia ekspluatatsii i remonta stroitel'-
nykh i dorozhnykh mashin. Moskva, Gos. izd-vo lit-ry po stroit.,
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(Building machinery—Maintenance and repair)
(Road machinery—Maintenance and repair)

IVYANSKIY, G.B., kand. tekhn. nauk; POLYAKOV, V.I., kand. tekhn.nauk;
RAYPENBERG, S.M., inzh.; CHEREPAKHIN, N.V., inzh.;
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A.V., zam. glav. red.; GRINEVICH, G.P., red.; YEPIFANOV, S.P.,
red.; ONUFRIYEV, I.A., red.; KHOKHLOV, B.A., red.; ZIMIN, P.A.,
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[Erection of completely precast apartment houses] Montazh polno-sbornykh zhilykh zdaniy; spravochnoe posobie. Pod red. V.P. Proskurnina. Moskva, Gosstroizdat, 1962. 94 p.

(MIRA 15:11)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva.
(Apartment houses) (Precast concrete construction)

GEL'MAN, A.S.; GRINEVICH, G.P., prof.; GRINEVICH, G.G.; ZOTOV, V.P.;
KOMAROV, G.V.; PAVLOV, S.N.; FIRMON, A.V.; TRUBIN, V.A., glav.
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[Handbook on loading, unloading, and conveying operations in
construction] Sptavochnik po pogruzochno-razgruzochnym i trans-
portnym rabotam na stroitel'stve. Pod red. G.P. Grinevicha.
Moskva, Gosstroizdat, 1962. 376 p. (MIRA 15:9)
(Material handling) (Building materials)

SOSHIN, A.V., doktor tekhn. nauk, prof.; SOKOLOV, N.M., doktor tekhn. nauk, prof.; TCHAPOV, A.S., kand. tekhn. nauk, dots.; BELINOVICH, M.S., inzh.; PETROV, N.S., kand. tekhn. nauk; LUPENKO, I.S., inzh., nauchn. red.

[Technology of the construction industry] Tekhnologija stroitel'nogo proizvodstva. [By] A.V.Soshin i dr. Moskva, Stroizdat, 1964. 423 p. (MIRA 17:10)

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MALER, Ye.; SOSHIN, B.; SMIRNOV, M.

Information. Avt. transp. 42 no.10:55-57 0 '64.
(MIRA 17:11)

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SOURCE CODE: UR/2865/65/004/000/0217/0226

AUTHOR: Kostikova, V. Ya.; Bayevskiy, R. M.; Kalinovskiy, A. P.; Soshin, B. A.

ORG: none

TITLE: Possible application of electronic logical circuits for automatic medical control

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 217-226

TOPIC TAGS: bioastronautics, bioinstrumentation, biotelemetry, automatic control system, logic circuit, electronic circuit

ABSTRACT: Space flights of longer duration and covering greater distances will sharply reduce telemetric transmission of medical and biological data. This leads to the problem of developing on board automatic medical control devices for monitoring data on the astronaut's condition. For space flights along established orbits which do not require readjustment of programmed instructions during course of flight, electronic logic circuits are satisfactory because of their simple design, low weight and small size. The algorithm of analysis for each

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Sensors

- Pulse rate
- Respiration rate
- Body temperature
- Electric resistance of skin
- Level of consciousness
- Level of motor activity
- Carbon dioxide level
- Oxygen level
- Temperature

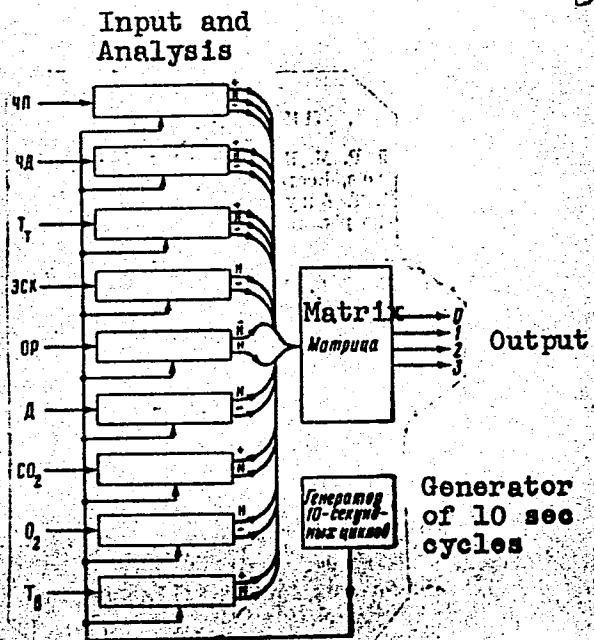


Fig. 6. Block diagram of an electronic logical system for automatic medical control.

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of the indices (such as, body temperature) includes three operations: (1) measurement of the index during a given interval of time; (2) comparison of the index value with the norm range in the form of symbols, e.g., designating normal by "N", or "+" for higher than normal, or "-" for lower than normal; and, (3) comparison of symbols of different parameters according to a given logical system and determination of a code indicating a "diagnosis." (see Fig. 6). All problems of automatic diagnosis in which linear programming is applicable can be solved by electronic logic circuits. Orig. art. has 6 figures and 1 table.

SUB CODE: 06, 09/ SUBM DATE: none/ ORIG REF: 004.

Card 3/3 FV

L 43899-65 EEC-4/EED-2/EWG(a)-2/EWG(c)/EWG(j)/EWG(r)/EEC(k)-2/EWG(v)/EWP(k)/EWT(d)/
EWT(1)/EEC(t)/EWP(h)/FS(v)-3/EEC(c)-2/EWP(1)/FSS-2/EWF(v) Pb-4/Pe-5/Pf-4/Pn-4/Pp-4/
Pq-4/Pac-4/Pae-2 AST

ACCESSION NR: AR4046575

S/0271/64/000/008/A077/A077

SOURCE: Ref. zh. Avtomat., telemekh. i vychisl. tekhn. Svodnyy tom, Abs. 84509 77
B

AUTHOR: Denisov, V. G.; Yegorov, A. D.; Kuz'minov, A. P.; Sil'vestrov, M. M.;
Soshin, B. A.

TITLE: Using biotelemetric data for investigation of the control systems of a
man-operated cosmic ship 16

CITED SOURCE: Sb. Radiotelemetriya i fiziolog. i med. Sverdlovsk, 1963, 121-124

TOPIC TAGS: telemetry communication, biometrics

TRANSLATION: Some psychological problems arising in the constructing of cosmic-
ship control systems are considered. A parameter is suggested which would allow
for the entire information on the psychophysiological condition of the operator
and on the deviations of the controlled quantities set by the operator in the
course of control; this parameter is proposed as an objective criterion for
comparing various systems similar in their output data. Under random external
disturbances, the "operator — ship" system has a certain degree of indeterminacy
which permits evaluating the system conditions, viz., operator's organism

Card 1/2

L 43899-65

ACCESSION NR: AR4046575

O
condition and quality of control. Here the concept of entropy can be used for quantitative evaluation of the indeterminacy. In determining the generalized criterion, an overall entropy for the selected electrophysiological indices and the controlled-parameter-deviation performance is used which requires processing a great deal of information in a computer. Thus, in long cosmic flights at a long range from the Earth, the installation of a ship-borne computer for narrow-band telemetric transmitting bioinformation to the Earth's stations in the form of a generalized criterion becomes expedient.

SUB CODE: AS, SV

EXCL: 00

Card 2/2 MB

KOSTIKOVA, V.Ya.; BAYEVSKIY, R.M.; KALINOVSKIY, A.P.; SOSHIN, B.A.

Possibility for using electronic logic circuits for automatic
medical control. Probl. kosm. biol. 4:217-226 '65.
(MIRA 18-9)

21(7), 21(8)

AUTHORS: Nemilov, Yu. A., Pisarevskiy, A. N., Sov/56-35-3-44/61
Soshin, L. D.

TITLE: On the First Excited State of Tb¹⁵⁹ (O pervom vozbuздennom sostoyanii Tb¹⁵⁹)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 3, pp 800 - 801 (USSR)

ABSTRACT: In the course of the investigation of the γ -radiation of Dy¹⁵⁹ (the decay of which is caused solely by K-capture) by means of a scintillation spectrometer, a line with double energy in momentum distribution is observed besides the K-X-rays of Tb¹⁵⁹ (44,5 keV). This line is produced by the total summation of quanta with the energy of 44,5 keV. According to these results, the observed line with 90 keV is the result of the summation of two cascade-like emitted quanta with half the energy. In the case of the first of these quanta there is K-emission of Tb¹⁵⁹ after K-capture, and the second quantum is produced by the discharge of the

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On the First Excited State of Tb¹⁵⁹

SOV/56-35-3-44/61

first excited state of Tb¹⁵⁹. N. P. Heydenburg and G. M. Temmer (Ref 2) presumed that the energy of the first excited state of Tb¹⁵⁹ amounts to 57,5 keV. J. W. Mehelih et al. (Ref 3) observed conversion electrons which correspond to this excited state. γ -rays which correspond to the discharge of this state were not observed in any of the aforementioned works. If the line mentioned exists at all, it amounts, according to the results obtained by this paper, to not more than 1% of the 44,5 keV peak. Additional verification was carried out by means of a summatting spectrometer with a CsJ(Tl)-crystal. The momentum-distribution thus obtained is illustrated by means of a diagram. The first excited state of Tb¹⁵⁹ discharges because of the strong 57,5 keV conversion line also with emission of a K-X-ray radiation, in which case the conversion coefficient is > 99%. The authors thank A. N. Murin and B. K. Preobrazhenskiy for placing a good radiation source at their disposal. There are 2 figures and 4 references, 3 of which are Soviet.

Card 2/3

On the First Excited State of Tb¹⁵⁹

SOV/56-35-3-44/61

ASSOCIATION: Radiyevyy institut Akademii nauk SSSR (Radium Institute of
the Academy of Sciences, USSR)

SUBMITTED: June 4, 1958

Card 3/3

NEMILOV, Yu.A.; PISAREVSKIY, A.N.; SOSHIN, L.D.

Investigation of γ -rays in As^{78} decay. Zhur. eksp. i teor. fiz. 35 no.3:801-802 S '58. (MIRA 12:3)

I.Radiyevyy institut AN SSSR.

(Arsenic--Decay) (Gamma rays)

05448
SOV/120-59-3-19/46

AUTHORS: Pisarevskiy, A. N. and Soshin, L. D.

TITLE: An Instrument for the Automatization of a Single-Channel Scintillation Gamma-Spectrometer (Pribor dlya avtomatizatsii odnokanal'nogo stsintillyatsionnogo gamma-spektrometra)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3,
pp 90-93 (USSR)

ABSTRACT: The apparatus described will automatically record differential spectra on a pen-recorder chart. The apparatus consists of a differential single-channel discriminator similar to that described by Farley (Ref 4), a scaling unit, an integrator (Ref 5), a control unit, a timer (Ref 6) and a pen-recorder (EPP-09). The work of the apparatus begins with the switching on of the timer which produces pulses at a repetition frequency chosen beforehand. These pulses are then fed into the control unit. The first pulse opens the output of the discriminator and the recording of the pulses at the output of the discriminator begins. After the 10th or the 100th pulse from the timer the output of the discriminator is cut off and the

Card 1/2

05467
SOV/120-59-3-38/46

AUTHORS: Pisarevskiy, A. N., and Soshin, L. D.

TITLE: The Best Working Conditions for FEU-13 Photomultipliers
(Ob optimal'nom rezhime fotoumnozhiteley FEU-13)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3,
pp 143 (USSR)

ABSTRACT: This multiplier is of the venetian-blind type and has a modulator electrode. Fig 1 shows the amplitude resolution of the multiplier as a function of voltage between photocathode and modulator for several different voltages on the modulator (with the overall voltage on the photomultiplier constant). Fig 2 shows analogous results for the overall sensitivity. It is concluded that the voltage between photocathode and modulator should be twice that between modulator and first dynode. There are 2 figures and 2 Soviet references.

ASSOCIATION: Radiyevyy institut AN SSSR (Radium Institute,
Academy of Sciences USSR)

SUBMITTED: May 10, 1958

Card 1/1

SOV/120-59-4-14/50

AUTHORS: Lomonosov, I. I., Pisarevskiy, A. N., Soshin, L. D.

TITLE: The Conversion Efficiency of NaJ(Tl) Crystals

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 70-71
(USSR)

ABSTRACT: Crystals grown by the Kyropoulos and Stockbarger methods are used with γ -rays of energy up to 1330 keV (the table lists the values, where χ is given by the second formula on p 70). Figs 1 and 2 show respectively the relation of Δ^2 and Δ^4 to $1/E$. It is concluded that the resolving power is overestimated unless proper allowance is made for the quantity b (the inherent resolving power) in the first formula on p 70. The paper contains 2 figures, 1 table and 7 references, 3 of which are English and 4 Soviet.

ASSOCIATION: Radiyevyy institut AN SSSR (Radium Institute, Academy of Sciences, USSR)

SUBMITTED: June 23, 1958.

Card 1/1

SOV/120-59-4-15/50

AUTHORS: Nemilov, Yu. A., Pisarevskiy, A. N., Soshin, L. D.

TITLE: A Form of Distortion in Line Spectra Produced by NaJ(Tl) Crystals

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 72-73 (USSR)

ABSTRACT: A 128-channel analyzer is used with 660, 280 and 70 keV γ -rays to show that some of the crystals examined in the previous paper in fact split monochromatic lines into two (Fig 1 shows some examples of the resulting spectra for one crystal with the sources in various positions). It is concluded that the Kyropoulos method gives perfect crystals, and that the Stockbarger method sometimes gives faulty ones. The paper contains 1 figure and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Radiyevyy institut AN SSSR (Radium Institute, Academy of Sciences, USSR)

SUBMITTED: June 6, 1958.

Card 1/1

21(7)

AUTHORS: Nemilov, Yu. A., Pisarevskiy, A. N., Soshin, L. D. SOV/48-23-2-18/20TITLE: γ Rays in the Decay of As⁷⁸ (γ -Luchi pri raspade As⁷⁸)PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 2, pp 255-256 (USSR)

ABSTRACT: According to references 1, 2 also γ rays of 0.27 and 0.610 Mev were determined in the decay of As⁷⁸ ($\tau = 90$ min). The investigations of this paper have shown that in the decay of As⁷⁸ ($\tau = 5-6$ min) a line is found at 500 kev, strong lines for $\tau=90$ min at 270, 610, 800, 1280 and 2680 kev and weaker lines at 80, 345, 690, 1200, 1620, 1880, 2040 and 2160 kev. The lines obtained ($\tau = 90$ min) are attributed to transitions in the As⁷⁸ $\xrightarrow{\beta^-}$ Se⁷⁸ decay; the 500 kev line ($\tau = 5$ min) corresponds to the transition from a metastable to a basic state of As⁷⁸, which then decays to Se⁷⁸ in the reaction mentioned. A scheme of the decay with all transitions obtained is given. The authors thank A. N. Protopopov and his coworkers for neutron irradiation of the isotopes. There are 1 figure and

Card 1/2

γ Rays in the Decay of As⁷⁸

SOV/48-23-2-18/20

4 references, 2 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
(Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2

21(3)

AUTHORS: Nemilov, Yu. A., Lomonosov, I. I., Pisarevskiy, A. N.,
Soshin, L. D., Teterin, Ye. D.

SOV/48-23-2-19/20

TITLE: Some Problems on the Linearity of the Scintillation Spectrometer
(Nekotoryye voprosy lineynosti pri stscintillyatsionnoy
spektrometrii)PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 2, pp 257-262 (USSR)ABSTRACT: In a more accurate investigation of the scintillation reaction
of NaJ(Tl) in the case of γ excitation the authors found
deviations from the reaction linearity up to 20% within the
range of $E_\gamma < 100-150$ kev (Ref 6). This problem was investi-
gated according to a method already applied in previous papers.
The measurements were carried out by means of crystals produced
at the Institut kristallografii AN SSSR (Crystallographical
Institute of the AS USSR) and in the Khar'kov Works. The
crystals were bred according to methods devised by Kiropolos
and Stokbarger. The measurement results of various crystals
NaJ(Tl), CsJ(Tl), KJ(Tl) on deviation of the scintillation
reaction from linearity within the range 10-1500 kev are

Card 1/3

SOV/48-23-2-19/20

Some Problems on the Linearity of the Scintillation Spectrometer

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
(Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 3/3

87365
S/120/60/000/004/004/028
E192/E482

An Automatic Portable Single-Channel Scintillation Gamma-Spectrometer Based on Transistors

of the registered pulses, is then applied to an automatic recording milliammeter. The instrument operates as follows: a suitable time delay is set by a timer. An initial discrimination level is set by means of bias circuits. The timer is then switched on and the information to be processed is fed in. After the termination of a pre-determined delay time, the timer produces a pulse which is applied to the automatic biasing circuit and a control circuit. The latter resets the memory circuits. The automatic biasing circuit changes the level of the discriminator to a new value. In order to select a suitable scale for the instrument and a suitable delay time, the instrument is provided with an intensimeter (Ref.1). The discriminator of the instrument consists of diode limiters and millivolt selectors of the lower and upper levels (based on transistors) and an anticoincidence circuit (based on transistors). The scale-estimating circuit consists of 7 identical binary cells which are based on transistors. The registering device is based on the system analogous to that

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87365

S/120/60/000/004/004/028
E192/E482

An Automatic Portable Single-Channel Scintillation Gamma-Spectrometer Based on Transistors

described by O.I.Sumbarev (Ref.4). It consists of 2 identical binary counters (memory and registering counters) which are connected "in opposition" and contain "AND" circuits between the individual cells. The timer is based on dekatrons and uses a stabilized frequency of 10 kc/s as the standard timing waveform. The automatic biasing circuit for the discriminator is based on binary dividers and consists of 8 cells. The pick-up head of the instrument employs a photomultiplier, type ПДУ-13 (FEU-13), whose output pulses have an amplitude of 10 V. It is therefore possible to use these pulses without amplification. With a supply voltage of 1880 V it is possible to obtain signals with an amplitude of 10 to 12 V for the γ -line of 660 keV for Cs¹³⁷ (with a crystal NaI(Tl)). The instrument is capable of determining 128 points of the investigated spectrum, the width of the discriminator level being 0.1 V, which corresponds to the amplitude range of 0.1 to 12.7 V. The time delay can be 4, 20, 60, 120, 300 and 600 sec. The stability of the instrument during 3 to 4 hours

Card 3/4

*9.2586*87380
S/120/60/000/004/022/028
E073/E435

AUTHOR:

Soshin, L.D.

TITLE:

Transistorized Kipp Oscillator With a Millivolt
Response Threshold

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 4, p.138

TEXT: For amplitude analysis diode discriminators are used in combination with millivolt triggering equipment (Ref.1) which are built up using electron tubes (Ref.2,3). In this paper a circuit of a Kipp oscillator is presented in which the millivolt threshold is transistor-operated and which can be applied also in combination with a diode discriminator. The tail of the negative input pulse cuts off $\text{M}\text{N}-1$. The pulse from the collector electrode of $\text{M}\text{N}-1$ unblocks fully $\text{M}\text{N}-2$ (which is weakly conducting in the static state). Thereby, a pulse with an amplitude of about 1.5 V is produced on the common emitter resistance. Tuning of the circuit reduces to selecting, for the given transistor pair, a divider which will supply the required base potentials. The response threshold is set by the divider in the base circuit of $\text{M}\text{N}-2$. The diode in the circuit of the base $\text{M}\text{N}-2$ fulfills the same role as in the circuit described by E.C.Park (Ref.1). The

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87380

S/120/60/000/004/022/028
E073/E435

Transistorized Kipp Oscillator With a Millivolt Response Threshold

duration of the output pulse for the here given parameters of the circuit is 5 μ s. The recovery time of the circuit is about 7 μ s. The absolute value of the response threshold can be set between 5 and 500 mV. The thermal stability of the circuit is ensured by feeding the base potentials from a low ohm divider so that in the initial state both transistors are conducting. On varying the ambient temperature between 0 and +40°C the response threshold will vary between 6 and 4 mV. In Fig.1 the resistances marked by an asterisk are selected during the process of tuning. There are 1 figure and 3 non-Soviet references.

(Note: This is a complete translation)

ASSOCIATION: Radiyevyy institut AN SSSR
(Radium Institute AS USSR)

SUBMITTED: May 28, 1959

Card 2/3

85348

9,4130 (2301, 2801, 3001)
26,2421

S/120/60/000/005/018/051
E032/E514

AUTHORS: Nemilov, Yu.A., Belozerskiy, G.N. and Soshin, L.D.

TITLE: On the Stability of Photomultipliers

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.5, pp.81-85

TEXT: A study is reported of the stability of photomultipliers with Cs-Sb and composite dynodes under various conditions. The overall sensitivity of the photomultipliers was measured both under constant and pulsed illumination of the photocathode. In the case of the pulsed illumination the measurements were carried out under conditions analogous to those employed with the scintillation spectrometer, or by measuring the average current at the output of the photomultiplier. Both methods are adequate provided the mean current is much greater than the dark current. When this is not true, average-current measurements can lead to false conclusions. The multi-channel kicksorter AMA-3c (AMA-3s) (Ref.4) was employed in the case of the pulsed measurements. Special steps were taken to keep the temperature at a constant and known value. Experiments showed that the role of the photocathode in introducing the observed changes in the overall sensitivity is quite negligible. It follows

Card 1/2

85348

S/120/60/000/006/001/045
E032/E314

21.5300

AUTHORS: Pisarevskiy, A.N. and Soshin, L.D.

TITLE: The Technique of Fast Coincidences with Slow
Scintillators (A Review)

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 6,
pp. 3 - 13

TEXT: A review is given of the various high-resolution coincidence techniques employing sodium and caesium crystals (Tl activated). The review is based largely on published Western work. Among the Soviet work quoted is the monograph by Gol'danskiy et al ("Statistics of Nuclear Particle Counting") where a discussion is given of the theoretical estimates of the minimum resolving time. Work by Belozerskiy et al (Ref. 6 - to be published) on the leading edges of NaI and CsI pulses is briefly mentioned. Another Soviet paper quoted is that by Mel'nikov (Ref. 12), who has described a special amplifier for use in conjunction with caesium-iodide crystals. The latter author obtained a resolving time of 7×10^{-8} sec with

VC

Card 1/2

PISAREVSKIY, A.N.; SOSHIN, L.D.; FIRSOV, Ye.I.

Using the P-N junctions in recording nuclear radiations (survey).
Prib. i tekhn. eksp. 6 no.6:14-20 N-D '61. (MIRA 14:11)

1. Institut fiziki AN BSSR.
(Nuclear counters)

PERTSEV, A.N.; PISAREVSKIY, A.N.; SOSHIN, L.D.

Study of single-electron noises in photomultipliers. Prib. i
tekhn. dksp. 8 no.5:173-176 S-0 '63. (MIRA 16:12)

1. Belorusskiy gosudarstvennyy universitet.

L 32074-66 EWT(1)

ACC NR: AR6016151

SOURCE CODE: UR/0058/65/000/011/A026/A026

AUTHOR: Yefimchik, M. K.; Izokh, V. V.; Soshin, L. D.

58

TITLE: Differential amplitude discriminators using tunnel diodes

B

SOURCE: Ref. zh. Fizika, Abs. 11A272 75

REF SOURCE: Tr. 6-y Nauchno-tekhn. konferentsii po yadern. radioelektron., T. 1. M.,
Atomizdat, 1964, 143-151TOPIC TAGS: tunnel diode, transistorized circuit, flip flop circuit, pulse height
analyzer

ABSTRACT: Two types of differential amplitude discriminator circuits are considered:
1) using tunnel diodes only, and 2) using tunnel diodes and transistors. The first
circuit consists of two tunnel diodes connected in series with a resistance. Each
of the diodes operates in a flip-flop mode, but one of them has a higher operating
threshold, owing to the voltage drop across the resistor. A method of choosing the
necessary circuit parameters on the basis of the diode characteristics is demonstrated.
Questions of the temperature compensation are considered, since the lower discrimina-
tion threshold varies with changing temperature, as does also the peak current in the
first tunnel diode. The compensating element is proposed to be a reference diode of
the D808 type. The schematic diagrams with thermal compensation of the upper and
lower thresholds and of the channel width are proposed. The second type of the dis-
criminator scheme uses an anticoincidence circuit with two transistors. The discrim-

Card 1/2

L 18826-65 EWT(1)/EEC(b)-2/EWA(h) Feb

S/0120/64/000/003/0132/0135

ACCESSION NR: AP4041034

AUTHOR: Pertsev, A. N.; Pisarevskiy, A. N.; Soshin, L. D.

TITLE: Studying the statistics of single-electron pulses in a multiplier phototube
by a coincidence method

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1964, 132-135

TOPIC TAGS: multiplier phototube, FEU-42 phototube, FEU-36 phototube,
FEU-13 phototube

ABSTRACT: The amplitude distribution of phototube pulses corresponding to the
photocathode emission of single electrons was studied by means of a coincidence
circuit (see Enclosure 1). A grid-controlled 1-cm-screen ELO-1B electron-
beam tube was used as a luminous source producing 1-microsec light pulses (tube
screen de-excitation time was 0.3 microsec). A low-noise FEU-42 multiplier
phototube was used to check the fact that single-electron pulses corresponded to

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L 18826-65

ACCESSION NR: AP4041034

the light flashes. It was found that: (1) the amplitude distribution measured by this method coincides with that obtained by other methods; (2) the amplitude distribution of single-electron pulses for FEU-13 and FEU-36 tubes can be described by the Poisson law with a low K; (3) in measuring weak luminous signals (particularly at the single-electron pulse level), the FEU-42 tube yields a better statistical reliability than do FEU-13 and FEU-36 tubes. Orig. art. has: 4 figures, 2 formulas.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet (Belorussian State University)

SUBMITTED: 17Jun63

ENCL: 01

SUB CODE: EC

NO REF SOV: 005

OTHER: 004

Card 2/3

L 18826-65
ACCESSION NR: AP4041034

ENCLOSURE: 01

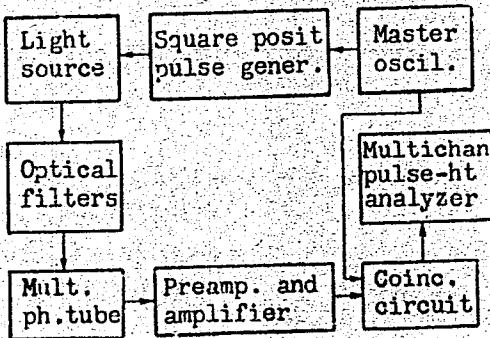


Fig. 1 - Block diagram of a coincidence circuit
used for studying the statistics of single-
electron pulses in multiplier phototubes

Card 3/3

L 46320-65 EWT(1)/EEC(k)-2/T/EEC(b)-2/EWA(h) FJ-4/Feb/Pm-4/Pz-6 IJP(c)

ACCESSION NR: AP5011875

UR/0120/65/000/002/0084/0088

3.1

31

B

AUTHOR: Yefimchik, M. K.; Izokh, V. V.; Soshin, L. D.

TITLE: Tunnel-diode differential discriminator ✓

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 84-88

TOPIC TAGS: pulse height discriminator, differential discriminator, Ge tunnel diode

ABSTRACT: A simple pulse-height differential discriminator is described which consists of two parallel-connected tunnel-diode triggers. The operating threshold of one trigger is higher due to a series resistor in its circuit. An approximate graphic method of calculation of the discriminator is indicated. Temperature compensation of threshold and gate width by means of an additional "reference" D808 diode is briefly described. The discriminator was tested in conjunction with a scintillation gamma spectrometer (NaI(Tl) crystal, Co⁶⁰ source); the spectrum was measured with the discriminator adjusted to a 1-v threshold and a 20-mv-wide

Card 1/2

L 46320-65

ACCESSION NR: AP5011875

gate. For n-type Ge tunnel diodes, the above temperature-compensation circuit cut the gate-width instability to 1/8 of its original value. Also, a discriminator with modern temperature-stable tunnel diodes directly connected to an FEU-13 photomultiplier was tested. Pulses corresponding to 30-40 kev energy were analyzed.
Orig. art. has: 5 figures and 5 formulas. [03]

ASSOCIATION: Belorusskiy gosudarstvennyy universitet (Belorussian State University)

SUBMITTED: 05Feb64

ENCL: 00

SUB CODE: EC

NO REF SOV: 001

OTHER: 000

ATD PRESS: 4002

Card 2/2

L 46319-65 EWT(1)/EWT(m)/EEC(b)-2/EWA(h) Feb DIAAP

ACCESSION NR: AP5011886

UR/0120/65/000/002/0146/0149

19
18

B

AUTHOR: Pertsev, A. N.; Pisarevskiy, A. N.; Soshin, L. D.

TITLE: Effect of Co⁶⁰ gamma rays on the parameters of a multiplier phototube

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 146-149

TOPIC TAGS: multiplier phototube, gamma rays

ABSTRACT: Multiplier phototubes were irradiated with 1 and 130 r/sec gamma rays: FEU-13 tubes were irradiated twice and one FEU-1S tube, three times. Multichannel AI-100 and AMA-4S pulse-height analyzers were used for measurements. It was observed that the phototube gain increased 1.5-4.2 times, the number of spurious pulses greatly increased (10-162 times), and the photocathode efficiency decreased (1.5-9.5 times). Both above-mentioned tubes restored their gain and cathode efficiency within 24 hrs after the first irradiation. However, after the second irradiation, the characteristics were not fully

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L 46319-65

ACCESSION NR: AP5011886

restored. These conclusions are reported: Upon irradiation of the FEU-13 and FEU-1S with 50000 r, these phenomena take place: (a) sensitivity of the photocathode to the NaI(Tl)-fluorescence spectrum drops to 1/4 of its original value; (b) gain increases 3.5 times; (c) the secondary-emission coefficient k of the first dynode increases; (d) noise increases by more than one order of magnitude. The gain and photocathode sensitivity return to their original values in 24 hrs. Orig. art. has: 2 figures and 1 table. [03]

ASSOCIATION: Belorusskiy gosudarstvennyy universitet (Belorussian State University)

SUBMITTED: 02Dec63

ENCL: 00

SUB CODE: EC, NP

NO REF SOV: 004

OTHER: 002

ATD PRESS: 4002

Card 2/2 (M)

L 54783-65
ACCESSION NR: AP5016041

EWT(1)/EEC(b)-2/EMA(h) Feb
UR/0368/65/002/005/0396/0401
621.387.2:535.37

AUTHOR: Pertsev, A. N.; Pisarevskiy, A. N.; Soshin, L. D.

TITLE: Use of single-electron pulse photomultipliers for
recording weak light fluxes

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 5, 1965, 396-401

TOPIC TAGS: photomultiplier, quantum counter, Poisson distribution,
secondary multiplication, thermoelectronic noise, dark current

ABSTRACT: The possibility of using a photomultiplier to count individual quanta of light was examined by investigating noise in the photomultiplier itself and the statistical laws of secondary multiplication. The amplitude of thermoelectronic noise follows a Poisson distribution; it was shown graphically that the amplitude distribution of single-electron pulses for the FEU-1S photomultiplier has this form. Graphs were also presented to describe the counting rate of one 13-cascade photomultiplier model and the amplitude distribution of its noise

Card 1/2

L 54783-55

ACCESSION NR: AP5016041

pulses. It was shown that some Soviet-made photomultipliers are sufficiently sensitive to measure luminous fluxes of 30—300 quanta per second at room temperature. Orig. art. has: 3 figures. [YK]

ASSOCIATION: none

SUBMITTED: 05Jun64

ENCL: 00

SUB CODE: EMOP

NO REF SOV: 012

OTHER: 018

ATD PRESS: 4029

Card 2/2

I 63624-65 EWT(1)/EWT(m) Pi-4/Peb DIAAP/IJP(c)
ACCESSION NR: AP5015778 UR/0250/65/009/005/0299/0300

96
35

21

AUTHORS: Pertsev, A. N.; Pisarevskiy, A. N.; Soshin, L. D.

TITLE: Measurement of the absolute yield of NaI (Tl) during gamma luminescence

SOURCE: AN BSSR. Doklady, v. 9, no. 5, 1965, 299-300

TOPIC TAGS: sodium iodide scintillator, gamma luminescence, thallium activator, light yield

ABSTRACT: The absolute light yield of NaI (Tl) was determined by comparing the scintillation amplitude with the amplitude of a "single-electron" pulse at the output of a photoelectric amplifier, corresponding to the escape of a single electron from the photocathode. The number of light quanta arising in the crystal upon absorption of a γ quantum is given by

$$N = \frac{1}{c} \frac{1}{\mu} \frac{1}{\xi} \frac{A_p}{A_e}$$

where A_p is the mean amplitude of the photopeak along the energy axis; A_e is the mean amplitude of the "single-electron" distribution; ξ is the quantum yield of the photocathode averaged over the spectral sensitivity of the photocathode and over the luminescence spectrum; η is the coefficient of collection of photoelec-

Card 1/2

L 63624-65

ACCESSION NR: AP5015778

trons at the first dynode; μ is the coefficient of optical attenuation in the glass of the container and in the vaseline layer, and c is the collection of light allowing for reflection losses. Then the absolute energy yield of the crystal is given by

$$\chi = \frac{\bar{E}_N}{E_\gamma}$$

where E_γ is the absorbed energy of the γ quantum and \bar{E} is the average energy of photons in the luminescence spectrum. In the authors' measurements, $A_p/A_\gamma = (1764 \pm 3)\%$ photoelectrons, $\xi\eta = (8.2 \pm 0.08)\%$, $\mu = (96.4 \pm 1)\%$, and $c = (70 \pm 2)\%$, so that for Cs^{137} , which was used as the source of γ rays, $N = 31,900 \pm 7\%$ quanta, $N/E = (5.0 \pm 0.4)\%$ quanta/eV, and $\chi = (15.3 \pm 1.0)\%$. Orig. art. has: 2 formulas.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet im. V. I. Lenina (Belorus-sian State University)

SUBMITTED: 31Mar64

ENCL: 00

SUB CODE: SS, OP

NO REF SOV: 008

OTHER: 004

Card KC
2/2

PERTSEV, V. N.; PISAREVSKIY, A.N.; SOSHIN, L.O.

Highly efficient method for H^3 counting. Dokl. AN BSSR 9 no. 8:509-510
Ag '65. (MIRA 18:10)

1. Belorusskiy gosudarstvennyy universitet imeni V.I.Lenina.

L 49130-65 EWT(1)/EPA(s)-2/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) Pi-4/Pt-7/Peb
DIAAP/LJP(c) JD/JG

ACCESSION NR: AP5011118

UR/0051/65/018/004/0644/0647

AUTHOR: Pertsev, A. N.; Pisarevskiy, A. N.; Soshin, L. D.

TITLE: Measurement of the absolute yield of alkali-halide crystals under Gamma luminescence

SOURCE: Optika i spektroskopiya, v. 18, no. 4, 1965, 644-647

TOPIC TAGS: alkali halide crystal, Gamma luminescence, light yield, energy yield, scintillation counter

ABSTRACT: In view of the scanty data on the light yields of alkali-halide scintillators, and in view of the large differences in the available data, the authors determined the absolute light yields of the crystals NaI(Tl), CsI(Tl), and KI(Tl) by comparing the amplitudes of the scintillation with the amplitude of a "single-electron" pulse at the output of a photomultiplier. The measurements were made at room temperature, using excitation with γ rays from Cs¹³⁷, on large batches of various crystals of different sizes with different reflectors, and with different Tl contents. The number of quanta produced in NaI(Tl) by absorption of one γ quantum from Co¹³⁷ was found to be 31,900, the light yield was 5.0% (quanta/eV), and

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ACCESSION NR: AP5011118

the absolute energy yield was $15.3 \pm 1\%$. For CsI(Tl) and KI(Tl) the energy yield was found to be $6.0 \pm 0.4\%$ and $3.1 \pm 0.3\%$. For the crystals containing 2, 1, 0.5, and 10-6% the values of the energy yield were 11.5 ± 0.9 , 13.7 ± 1.0 , 9.0 ± 0.6 , and $2.7 \pm 0.2\%$. The results are compared with those obtained by others. Orig. art. has: 2 figures and 6 formulas. [09]

ASSOCIATION: None

SUBMITTED: 06Apr64

NO REF Sov: 008

ENCL: 00

OTHER: 007

SUB CODE: SS, OF

ATT PRESS: 4003

Card 2/2

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001652520011-8

PERTSEV, A.N.; PISAREVSKIY, A.N.; SOSHIN, L.D.

Measurement of the absolute yield of alkali halide crystals in
gamma luminescence. Opt. i spektr. 18 no.4:644-647 Ap '65.
(MIRA 18:8)

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001652520011-8"

PERTSEV, A.N.; PISAREVSKII, A.N.; SOSHIN, L.D.

Measurement of the absolute yield of NaI(Tl) in gamma-luminescence.
Dokl. AN BSSR 9 no. 5:299-300 My '65 (MIRA 19:1)*

1. Belorusskiy gosudarstvennyy universitet imeni V.I. Lenina.
Submitted March 31, 1964.

L 27056-66

ACC NR: AP6007839

the resistances required for the various multipliers are given. Orig. art. has:
5 figures.

SUB CODE: 20, 09 / SUBM DATE: 09Jan65 / ORIG REF: 002

Card 2/2 ✓

RYZHKOV, Geniy Mikhaylovich; SUSHIN, Petr Ivanovich

[Programmed control in heat treatment] Programmoe regu-
lirovaniye pri termicheskoi obrabotke. Moskva, Metallurgija,
(MIRA 17:12)
1964. 70 p.

Rybachov, V. M., Institute of Metal Physics, USSR (USSR), Polzunov, Irkutsk.

Experimental heat treatment of ball bearing steel. Stal' 24
No. 12/1964, 23-1189 D 164. (MIRA 18:2)

1. Blagoveshchenskiy metallurgicheskiy zavod.

SHISHKINA, V.I.; OMEL'CHENKO, S.I.; SOSHIN, V.A.

Characteristics of the structure and chemical transformations of carbazole and some of its derivatives. Report No.6: Nitration reaction of carbazole and its N-derivatives. Trudy Ural.politekh. inst. no.96:19-23 '60.
(Carbazole) (Nitration) (MIRA 14:3)

SOSHIN, V.P., zootehnik

Fattening cattle. Nauka i pered.op.v sel'khoz. 7 no.7:19-20 Jl '57.
(MLRA 10:8)

(Cattle--Feeding and feeding stuffs)

SOSHIN, Ye.

In calculating the bonus for repair workers you should exactly
account for the output of repaired motor vehicles. Avt. transp.
(MIRA 17:5)
42 no. 5:37 My '64.

1. Glavnnyy bukhgalter Bryankovskoy avtotransportnoy kontory
Krasnoyarskogo avtoupravleniya.

SOSHINA, M. A.

USSR/Medicine - Leishmaniasis

11 Sep 53

"Problem of the Mechanism of Transmission of Cutaneous Leishmaniasis," M. A. Soshina, Inst of Epidemiol and Mikrobiol im N. F. Gamaleya, Acad Med Sci USSR

DAN SSSR, Vol 92, No 2, pp 447, 448

The mechanism of the transmission of cutaneous leishmaniasis by Phlebotomus papatasii, Ph. caucasicus, and sandflies in general has been investigated and explained. Leptomonades of leishmania are found in the blood, digestive tract, throat, and mouth of the sandflies after they have fed on blood contng

269T31

infected tissue. They are not present in the saliva glands. Infection after the sandfly bite occurs by reason of contamination with the insect's fecal matter. Presented by Acad Ye. N. Pavlovskiy 15 Mar 53.

STRELKOV, I.S.; SOCHINA, N.V.; ZAYTSEVA, A.N.

Density microfluctuations in simple liquids. Ukr. fiz. zhur. 9 no.5:
476-480 Ky '64. (MIRA 17:9)

1. Belorusskiy gosudarstvennyy universitet, Minsk.

L 08077-67 EWP(e)/EWT(m) DS/CG/WH

ACC NR: AP6034215

SOURCE CODE: UR/0368/66/005/004/0486/0488

AUTHOR: Yushkevich, G. F.; Soshina, N. V.

38

B

ORG: none

16

TITLE: Investigation of the effect of neutron and gamma irradiation on the optical density of glasses used in some photomultipliers

M

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 4, 1966, 486-488

TOPIC TAGS: photomultiplier, gamma irradiation, neutron irradiation, irradiation effect

ABSTRACT: An investigation was made of the effect of gamma and neutron irradiation on the optical density of glasses used for FEU-13, FEU-14, FEU-52, and FEU-56 photomultipliers. Photocathode glasses 40 and 70 mm in diameter and 1 and 2 mm thick, respectively, were used as specimens. Gamma irradiation was conducted in cobalt installations with dose rates of 100 and 1 r/sec. Neutron irradiation was conducted in the vertical channel of an IRT-2000 reactor with integral fluxes of 10^{10} , 10^{12} , 10^{14} , and 10^{16} neutrons/cm². A gamma-irradiation dose of the order of 5×10^4 r at an average quantum energy of 1.25 Mev increased the optical density of glasses approximately 1.05 times. Gamma doses of 10^7 r and higher brought about greater changes. Neutron irradiation also darkened the glasses, although the darkening was uneven. The darkening can be linked to the appearance of F-color

Card 1/2

UDC: 666.266.5

L 08077-67

ACC NR: AP6034215

centers. The following conclusions were made: 1) Glass darkening increases with an increase of the irradiation dose. 2) Irradiation with neutrons produces an uneven darkening. 3) When a photomultiplier receives a dose higher than 10^5 r, the total multiplier gain should be corrected by a value specified by the change in optical density of the photocathode glass. 4) Heating to a temperature of 350—400C results in partial restoration of the glass's transparency while ultraviolet irradiation produces no such effect. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 27Feb65/ ORIG REF: 001/ ATD PRESS: 5102

Card 2/2 *shd*

L 30237-66

ACC NR: AP6020150

SOURCE CODE: UR/0250/65/009/011/0722/0724

AUTHOR: Yermakov, V. S.; Soshina, N. V.

OrG: Belorussian State University im. V. I. Lenin (Belorusskiy gosudarstvennyy universitet) 26
B

TITLE: Determination of uniformity of distribution of activity over a plane source with a large surface

SOURCE: AN BSSR. Doklady, v. 9, no. 11, 1965, 722-724

TOPIC TAGS: mathematics, absorption coefficient

ABSTRACT: The article considers the question of the determination of the uniformity of distribution of activity over the surface of a plane source. When $A(x, y)$ const, this value can be taken out of the integral sign, and the line of equal intensity can be found by solving the equation

$$A(\xi, \eta) = \iint_A A(x, y) \exp(-\mu r) dx dy. \quad (s)$$

Then, if several identical detectors are placed on this line, the uniformity of the distribution of activity in a given plane can be judged by comparing the intensities recorded by these detectors. The problem of the authors was to determine lines of equal intensity $A(\xi, \eta)$ const, given the absorption coefficient value μ const for a plane rectangular source of the size $2x_0 2y_0$. This article was presented by Academician, AN BSSR, A. N. Sevchenko.

Orig. art. has: 13 formulas: JPRS
 SUB CODE: 12, 07 / SUBM DATE: 15 Jun 64 /

Card 1/1 CC

PICHKHADZE, Sh.V., starshiy nauchnyy sotrudnik, kand. khim. nauk;
SOSHINA, S.M., starshiy nauchnyy sotrudnik, inzh.

Foreign experience in the application of synthetic polymers
in sizing. Tekst. prom. 24 no.8;84 Ag '64.

Foreign information based on materials from the Bulletin of
Foreign Commercial Information (BIKI). Ibid.:88

(MIRA 17:10)

1. Nauchno-issledovatel'skiy institut tekstil'noy i legkoy
promyshlennosti Gosudarstvennogo komiteta legkoy promyshlennosti
pri Gosplane SSSR.

IZABOLINSKAYA, R.M., kand. med. nauk; KOGOSOVA, L.S.; VEL'TMAN, R.P.,
nauchnyy sotrudnik; GRIGOR'YEVA, K.N.; SOSHINA, T.K.

Some indices of metabolism and reactivity of the organism in
extensiva pulmonary tuberculosis. Klin. khir. no.2:47-53. '65.
(MIRA 18:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut tuberkuleza i
grudnoy khirurgii.

SOSHINSKIY, M.A.

Unit for tar impregnation. Tekst.prom. 21 no.5:74 My '61.
(MIRA 15:1)

1. Nachal'nik tekhnologicheskogo otdela Ukrugiprolegproma.
(Rope industry--Equipment and supplies)
(Textile fibers--Preservation)

VEKLICHEV, D.T.; SOSHINSKIY, Yu.I.

Replacement of the charging arrangements on 2000-ton capacity
blast furnaces. Metallurg 9 no.2:8-10 F '64. (MIRA 17:3)

L 13039-63 EWT(1)/EWG(k)/EWP(q)/EWT(m)/BDS/ES(w)-2 ASD/ESD-3/SSD/
AFFTC Pz-4/Pab-4 JD/JG/AT/IJP(C)

ACCESSION NR: AP3001343

S/0057/63/033/006/0766/0768

76

75

AUTHOR: Molchanov, V. A.; Soshka, V.; Faruk, M. A.

TITLE: Angular distribution of sputtered tungsten and zinc particles

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 33, no. 2, 1963, 766-768

TOPIC TAGS: cathode sputtering, Wehner effect, W, Zn

ABSTRACT: Discovery of the effect of preferential ejection of particles in close-packed directions from single crystals under ion bombardment is attributed to G. K. Wehner (Phys. Rev., 102, 690, 1956). Subsequent to its discovery there have been many studies of preferential sputtering, but few give the actual angular distribution of the ejected particles. In the present work the authors used a previously described technique (ZhTF, 32, 1032, 1962) to study the angular distributions of ejection from tungsten and zinc single crystals. The deposit is caught on a collector and the spot is scanned on a microdensitometer. The projectiles were 30 keV argon ions. The density distribution over the deposit spot in the $\langle 100 \rangle$ direction of a W single crystal is approximated by a Gaussian curve with a half-width of 22° . In case of bombardment of Zn crystals on the basal plane there were obtained six spots in the $\langle 101 \rangle$ directions; again the

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L 13039-63

ACCESSION NR: AP3001343

distributions are roughly approximated by Gaussian curves, but with some distortion owing to overlapping of neighboring deposits. The half-widths for individual spots in the $\langle 101 \rangle$ directions of Zn are 24 to 28°. As in the case of cubic crystals there is correlation between the angular distribution of sputtered particles and the "valleys" in the curve characterizing the angular dependence of the sputtering factor. "The authors are grateful to M. W. Thompson (Harwell) for valuable suggestions regarding the procedure utilized for measuring angular distributions." Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 24Dec62

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF Sov: 005

OTHER: 010

Card 2/2

MOLCHANOV, V.A.; SOSHKA, V.

Energy spectra of ions scattered by polycrystalline surfaces
within small angles. Dokl. AN SSSR 155 no.1:70-71 Mr '64.
(MIRA 17:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Predstavлено академиком L.A.Artsimovichem.

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001652520011-8

MAMIKOTA, YASUO, SHIBATA, TOSHIRO, SOKIKA, Y., TAKIN, M.A.

Scattering of ions by surfaces of alloys. Russ. Phys. Jelia 7
No. 10 (1982)-2024. G 166. (MIRA 18.11)

I. Kukotsky Institute of Physics, University of Chernogolovka.

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001652520011-8"

L 65060-65 EWT(1)/T IJP(c) GG

UR/0020/65/161/004/0813/0816

44

ACCESSION NR: AP5010829

38

AUTHOR: Mashkova, Ye. S.; Molchanov, V. A.; Soshka, V.

B

TITLE: The effect which the crystal structure of the target has on the energy spectra of scattered ions

44,55

SOURCE: AN SSSR. Doklady, v. 161, no. 4, 1965, 813-816

2,44,55

TOPIC TAGS: particle scattering, copper, irradiation, ion beam, particle spectrum

ABSTRACT: The ordering of atoms in the target has a considerable effect on many processes which take place when the surfaces of solids are irradiated by ion beams. For this reason the authors studied the effect which the crystal structure of the target has on the energy spectra of scattered ions. Copper crystal targets with various orientations were irradiated with singly charged 30 kev argon ions. The targets and analyzer were rotated around axis $<110>$ lying in the plane of the target. The energy spectra of ions scattered by the (100) face of the crystal are shown in fig. 1 of the Enclosure. Fig. 2 of the Enclosure shows the energy spectra of the ions when the shear plane of the target was at an angle of 18° with crystallographic plane (100). The difference between these spectra is explained. In the first case (irradiation of face (100)), the main crystallographic axis of

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L 65060-65

ACCESSION NR: AP5010829

6

the target never coincides with the direction of the analyzer axis. The only exception is the $\langle 110 \rangle$ axis which lies in the plane of the target. But in this case the direction (i.e. parallel to the surface of the target) scattered particles and primary displaced atoms of the target cannot be propagated because of the microsurface configuration. In the second case, axis $\langle 110 \rangle$ of the target coincides with the axis of the analyzer at a scattering angle of 28° and a Bragg angle of 10° . It is obvious that in this case there are sharply defined copper peaks in the energy spectrum, and the vertex of the A peak is narrower than at these same scattering and Bragg angles in the first case. However, it should be noted that this type of spectrum is observed not only in the case where the $\langle 110 \rangle$ axis coincides exactly with the analyzer axis, but within a certain range of scattering and Bragg angles. These energy spectra show that the crystal structure of the target has a considerable effect on the scattering of ions. The authors express deep gratitude to Professor I. Kistemaker for discussing the problem of ion scattering by crystals.

Orig. art. has: 2 figures. 44.55
ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo instituta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics, Moscow State University)

SUB CODE: NP, SS

SUBMITTED: 29 Oct 64

ENCL: 102

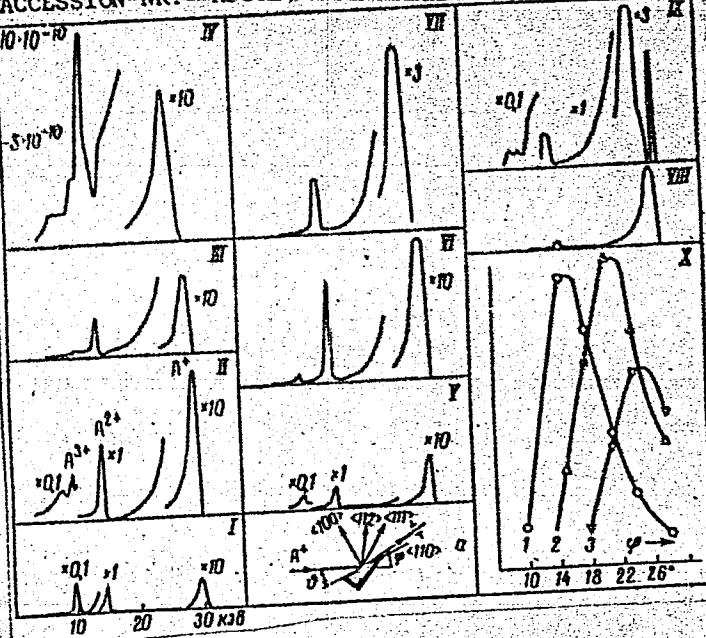
NO REF Sov: 007

OTHER: 010

Card 2/4

L 65060-65

ACCESSION NR: AP5017823



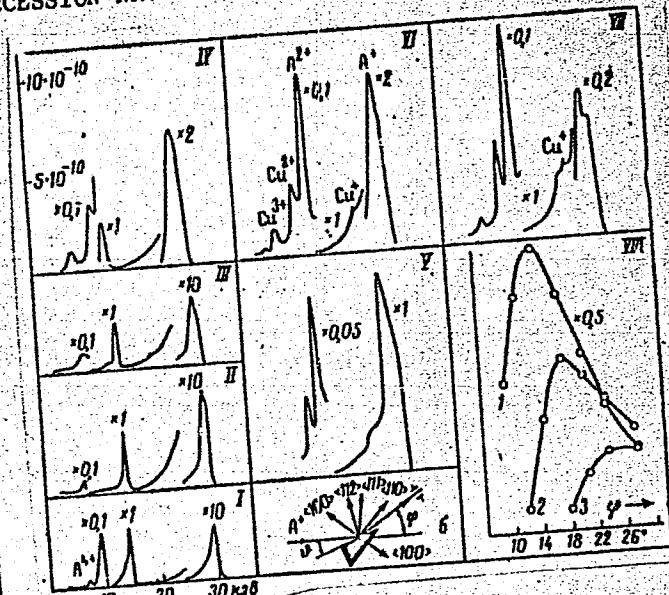
ENCLOSURE: 01

Fig. 1. Shear plane of the target coincides with face (100). Bragg angles θ , and scattering angles ϕ are: I-- $\theta=5^\circ$, $\phi=10^\circ$; II-- $\theta=5^\circ$, $\phi=15^\circ$; III-- $\theta=5^\circ$, $\phi=20^\circ$; IV-- $\theta=5^\circ$, $\phi=28^\circ$; V-- $\theta=10^\circ$, $\phi=15^\circ$; VI-- $\theta=10^\circ$, $\phi=20^\circ$; VII-- $\theta=10^\circ$, $\phi=28^\circ$; VIII-- $\theta=15^\circ$, $\phi=20^\circ$; IX-- $\theta=15^\circ$, $\phi=28^\circ$. At the right is the 30 kev A^+ line without a target, at $\phi=0^\circ$. X--intensity of peak A^+ as a function of the scattering angle at various Bragg angles: 1-- 5° ; 2-- 10° ; 3-- 13° , a--diagram of ion source position, analyzer and crystallographic axes of the target.

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L 65060-65

ACCESSION NR: AP5010829



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ENCLOSURE: 02

Fig. 2. Shear plane of the target at an angle of 18° to face (100): I-- $\theta=5^\circ$, $\phi=10^\circ$; II-- $\theta=5^\circ$, $\phi=15^\circ$; III-- $\theta=5^\circ$, $\phi=20^\circ$; IV-- $\theta=5^\circ$, $\phi=28^\circ$; V-- $\theta=20^\circ$, $\phi=28^\circ$; VI-- $\theta=10^\circ$, $\phi=28^\circ$; VII-- $\theta=15^\circ$, $\phi=28^\circ$; VIII--intensity of A peak as a function of scattering angle at various Bragg angles: 1-- 5° ; 2-- 10° ; 3-- 15° . b--positions of the ion beam, analyzer and crystallographic axes of the target.

L 52013-65 EPP(c)/EPA(w)-2/EWT(l)/EEC(t)/EPA(sp)-2

Pr-4/Pab-10/Peb AT

UR/0057/65/035/005/0963/0863

29

ACCESSION NR: AP5012066

AUTHOR: Molchanov, V.A., Soskina, V.

TITLE: On the dissociation of molecular ions during interaction with a solid surface

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 5, 1965, 963

TOPIC TAGS: ion scattering, ion dissociation, molecular ion, nitrogen, copper

ABSTRACT: The ions scattered at 10° , 15° , 20° and 28° by a polycrystalline copper target from a beam of 30 keV nitrogen ions incident on it at 5° were investigated by a method that the authors have described elsewhere (DAN SSR, 155, 70, 1964). At the small scattering angles nitrogen molecule ions were present, as well as singly and doubly charged atomic ions. As the scattering angle increased the relative number of molecule ions decreased, and at the largest scattering angle none were perceptible. This behavior is explained by the fact that large scattering angles correspond to small impact parameters: an ion that is scattered through a large angle approaches close to the nucleus of the scattering atom, which apparently leads to a large dissociation probability. Orig. art. has: 4 figures.

Card 1/2

L 52013-65

ACCESSION NR: AP5012066

ASSOCIATION: None

SUBMITTED: 16Oct64

ENCL: 00

SUB CODE: NP

NR REF SCV: 005

OTHER: 002

Card 2/2 MB

L 26640-66 EWT(1)/EWT(m)/T/EWP(t) IJP(c) JD/JG/AT

ACC NR: AP5025365

SOURCE CODE: UR/0181/65/007/010/2921/2924

AUTHOR: Mashkova, Ye. S.; Molchanov, V. A.; Soshka, V.; Faruk, M. A.

ORG: Moscow State University im M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Scattering of ions from alloy surfaces

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 2921-2924

TOPIC TAGS: argon, ion emission, copper, silver, copper alloy, silver alloy, neon, particle scatter, emission spectrum, crystal lattice, particle collision

ABSTRACT: The energy spectra were investigated during scattering of ions of argon and neon (30 kev energy) by targets from copper, silver and copper-silver alloy in order to investigate a number of questions: (1) on the limits of applicability of a concept of collision pairing and on consideration of the atom combination in the crystal lattice; (2) on the role of the nonelastic loss of energy in a range lower than Bohr's adiabatic criteria; (3) on the relative role of multiple collisions in various processes of ion interaction with solid substances. Results obtained are confirmed on the basis of paired collision

Card 1/2

L 26640-66

ACC NR: AP5025365

approximations. Orig. art. has: 3 figs.

SUB CODE: 20,11//SUBM DATE: 31Mar65// ORIG REF: 006/ OTH REF: 005

Car 2/2

ACCESSION NR: AT4008636

S/3039/63/000/000/0118/0125

AUTHOR: Soshka, Y.; Benesh, L.; Drashil, V.; Karpfel, Z.; Palechek, E.; Skalka, M.

TITLE: Significance of free deoxyribonucleotides at the onset of radiation injuries

SOURCE: Pervichnye i nachal'nye protsessy biologicheskogo deystviya radiatsii.
Moscow, 1963, 118-125

TOPIC TAGS: radiation injury, deoxyribonucleic acid, deoxyribonucleotide, deoxy-cytidyllic acid, thymidylic acid, bone marrow mitotic index, mitotic index, irradiation, deoxyadenylic acid, deoxynucleotide, nucleoside, nucleotide, ribonucleoside, ribonucleotide

ABSTRACT: After a short description of their earlier work on the beneficial effect of certain deoxyribonucleotides on the course of radiation sickness in animals, the authors describe their experience with the use of some of these compounds in radiation injuries. When injected into mice at doses equivalent to 0.3 mg of desoxycytidyllic acid (DCMP) 24 hours after irradiation with 500r, only DCMP, thymidylic acid (TMP), and deoxyadenylic acid showed a statistically significant beneficial effect on the bone marrow mitotic index. Further, DCMP and TMP stimulated the synthesis of DNA in the bone marrow of irradiated guinea pigs in vitro. Deoxycytidine and thymidine were also active, but to a lesser

1/3

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ACCESSION NR: AT4008636

extent. Fresh chick embryo extract increased DNA synthesis by 86%, and an extract of embryonic tissue prepared with 0.6 perchloric acid was also active. Further fractionation of the perchloric acid extract showed that the fraction containing triphosphate was most active followed by fractions containing the mono- and tetraphosphates. Further experiments in which the bone marrow of irradiated animals was incubated with P³² or formate-C¹⁴ and nucleotides showed with the aid of autoradiography, that P³² uptake in reticular cells was increased 2 to 5 times in the presence of DCMP compared to 3 times in non-irradiated animals. The uptake or incorporation of formate-C¹⁴ was also twice as great. However, in the presence of thymidylate, only P³² was incorporated and the incorporation of formate-C¹⁴ into DNA was decreased. DCMP normalized both the adenine/thymine (A/T) and guanine/cytosine (G/C) ratios, while TMP changed only the G/C ratio. Since it was assumed that the nucleotides which stimulate DNA synthesis in irradiated animals may serve as precursor of DNA, experiments were carried out with the spleens of irradiated rats. For several hours after a dose of 600r the level of deoxynucleotides and nucleosides in the spleen remained above normal, falling below normal only after 24 hours. In order to avoid the heterogeneity and variability of splenic tissue, experiments were then performed with regenerating rat liver, rats being irradiated (600r) either 1-2 hours after or 24 hours before hepatectomy. These results showed that, although irradiation alone, like hepatectomy, increased the level of deoxynucleotides and nucleoside in the liver, irradiation prevented the increase in deoxynucleotides (but not that in deoxynucleosides) usually following

Card 2/3

ACCESSION NR: AT4008636

hepatectomy. There were no marked differences in the content of polymeric DNA or in U. V. -absorbing (at 260 m μ) acid-soluble compounds between the animals subjected to hepatectomy, hepatectomy and irradiation, or irradiation alone, and controls. Paper chromatographic analysis of the various nucleic acid components showed the absence of purine deoxynucleotides. The authors conclude that the principal effect of irradiation is on DNA synthesis rather than on its polymerization. Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Institut biofiziki Chekhoslovatskoy AN, Brno. (Institute of Biophysics of the Czechoslovak AN).

SUBMITTED: 00

DATE ACQ: 20Dec63

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 012

Card 3/3